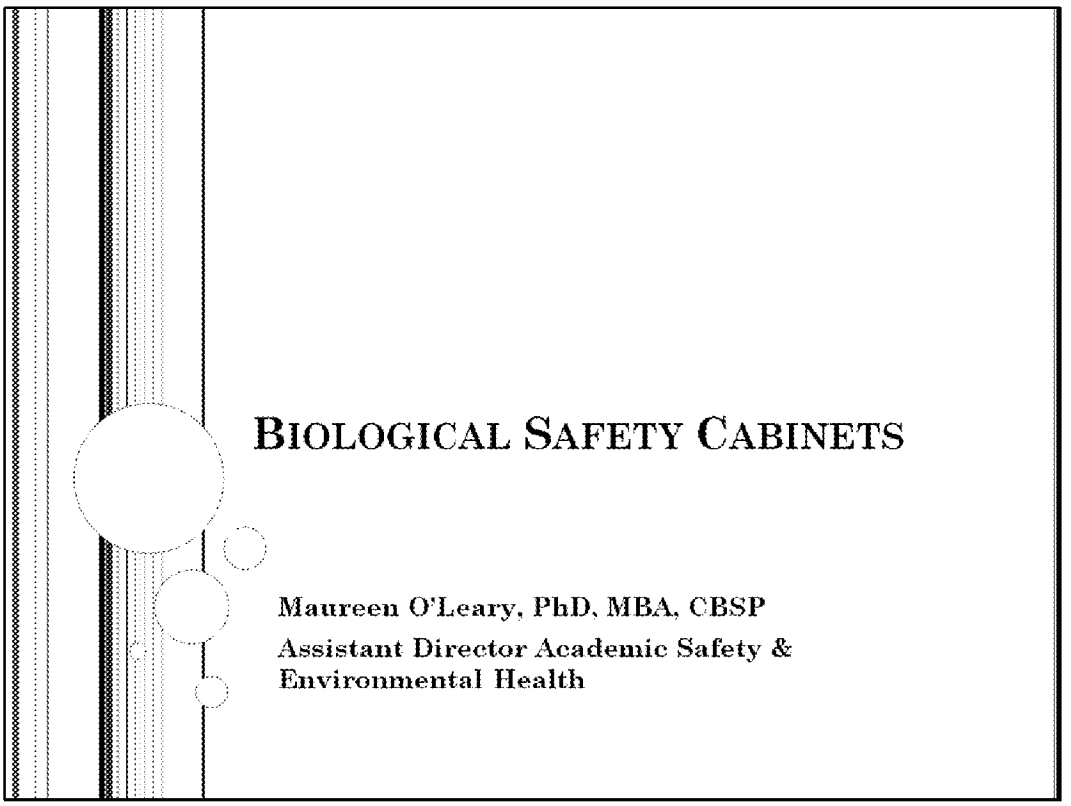
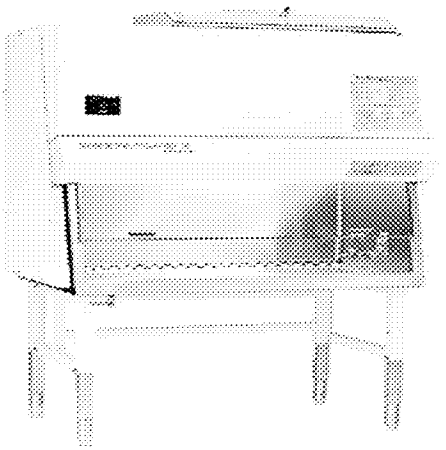


BIOSAFETY CABINETS

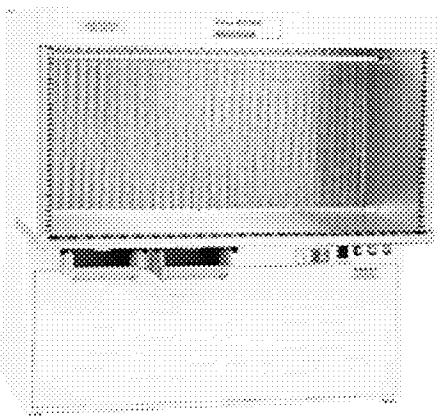
- Developed for working safely with infectious materials
- HEPA filter=High Efficiency Particulate Air 99.97% min. particle removal for .3microns

- Laminar flow hoods (Clean Benches) -for plant tissue culture, media preparation ONLY
- Fume hoods -for work with volatile chemical compounds

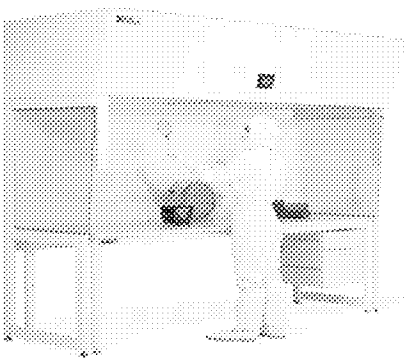
Biosafety Cabinet



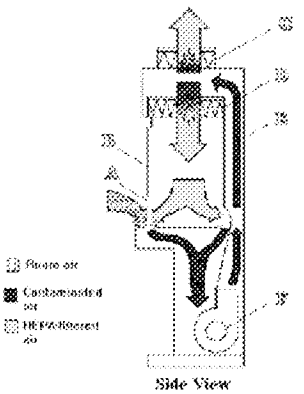
Laminar Flow or Clean Bench Horizontal flow



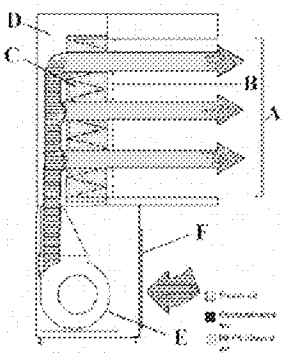
Laminar Flow or Clean Bench Vertical Flow

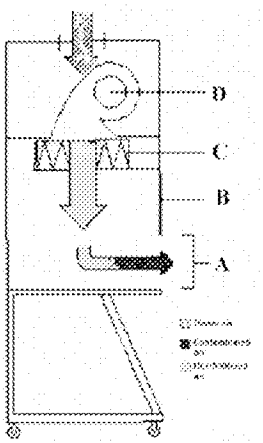


Biosafety Cabinet Airflow Diagram



Laminar Flow or Clean Benches
Airflow Diagram





Biosafety Cabinet Types

- Class I: No product protection, equipment use only
- Class II Type A: Both personnel & product protection
  - not suitable for use of volatile and toxic chemicals
  - 70% recirculated air
- Class II Type B1: Microbes plus low level toxic chemicals
  - 70% exhausted, 30% recirculated
- Class II Type B2: no recirculated air
- Class III: Totally enclosed

Biosafety Cabinets

Procedures for Use

- Turn on cabinet for 5 minutes before initiation
- Disinfect surfaces
- Assemble & organize material clean-contaminated areas, equipment in rear
- Wear PPE
- Slow hand & arm movements
- Do not block grilles
- Remove contaminated items after decontamination or place in sealed biohazard bags
- Do not store items in a biosafety cabinet
- Disinfect after completion & autoclave wastes

BIOSAFETY CABINETS

- Use of flammable gases is not recommended in recirculating BSC's (Class II Type A1 and Type A2) because there could be a build up of gas if there is a leak or if the line is not completely turned off.
  - Several BSC have blown up……..
- Heat in a BSC & Safety
  - May cause turbulence within the air curtain which disrupts the pattern of HEPA-filtered air
  - May impact the integrity of the HEPA filter
  - May impact the seals of the cabinet

Survey of Government Agencies & BSC Manufacturers strongly recommend against the use of flammable gases and flames

- NIH/CDC
- WHO
- Public Health Agency of Canada
- NSF/ANSI (international standards)
- The Baker Company
- NuAire

Alternatives to Plumbed-in Natural Gas

- FirBoy
- Bacti-Cinerator IV
- Glass Bead Sterilizer
- Electric Bunsen Burner

BIOSAFETY CABINETS....MORE INFORMATION

- Location of biosafety cabinet
- Annual certification
- Re-certify if moved, or see a drop in air pressure gauge
- Decontamination before moving/discarding
- Use of UV light:
  - Hazard to eyes/skin/cabinet
  - 1-2 year life
  - Poor Penetration-dust protects from deactivation
  - 10% bleach with a 70% ethanol wipe